

Do new first year students seek optimal distinctiveness in a new learning environment?

Abstract

The learning experience of the first year student joining Higher Education Institutions (HEI) can be examined from a number of perspectives and we focus upon the development of identity within that new learning environment. A conceptual framework is presented to argue that the tension between distinctiveness and **social** identification of the learner with the environment, contributes to how the learner engages in that environment through their processing style. A supporting empirical analysis explores this argument for a small sample of new first year students in two UK HEIs studying business modules. We determine that students exhibit cognitive dissonance **through** exercising a dominant processing style that is not primarily seeking to identify with that learning environment whilst also recognising the benefits of a more engaged processing style aligned with greater identification with their peer group. We propose **therefore** there is a need for the development of social identification capacity within new students.

Keywords: Information Processing Style, Optimal Distinctiveness Theory, Student Learner Identity

Acknowledgements: The author wish to thank the reviewers for the insightful and helpful comments provided in the development of this study.

Declarations of interest: None.

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

1.0 Introduction

We are concerned with how new students engage and develop a sense of belonging within a new learning environment. Normative evidence suggests engaging such students within the learning environment is achieved through creative stimulation; recognising learner diversity; being responsive to learner needs; supporting learner management; proactive assessment strategies; and working with that overall complexity in the learning environment (Trowler, 2010; Scanlon, Rowling and Weber, 2007). However, achieving this goal is difficult, despite the requirement from the Higher Education Funding Council for England (HEFCE) for "...institutions and sector bodies (to) make deliberate attempts to involve and empower students in the process of shaping the learning experience." (HEFCE, 2008 cited by Trowler, 2010: 16). It is particularly difficult to deliver for the new first year student in HE who lacks contextualised knowledge of their new learning environment (Scanlon, Rowling and Weber, 2007). We **thus** seek to explore their sense of identity and belonging to their new learning environment from a cognitive perspective.

There is an extensive volume of literature on learning styles and how they manifest and relate to understand what is an "effective learner" (for a summary of the literature see: Curry, 1983; Reynolds, 1998; De Vita, 2001; Honey & Mumford, 2006; Hawk & Shah, 2007; **Ren, 2013**). This literature sustains a view of a continued widespread influence of learning styles across the educational sector but it is not without challenge (see Pashler et al (2009) for example). **In addition**, whilst this literature offers a broad brush understanding of the

mix of factors likely to generate effective learning, it is also rich in overlapping meanings, taxonomies and concepts that can inhibit their clarity (see Boström and Lassen (2006) for example). Ren (2013) provides a useful overview of the development of the learning styles literature in the last 40 years with definitions based upon who was studied (the type of learner and potential views of a learner cognitive style and its meaning), their gender and where the learning focus and method of engagement was taking place. That work then builds upon an earlier and more widespread critical review of the learning styles literature explored by Coffield et al (2004b) who identified more than 70 learning style models. This diversity of views continues for example with the attempts to clarify similarities and differences between experiential forms of group learning (Sunyoung et al, 2013),

Dean and Jolly (2012) propose a conceptual framework drawing upon biological and identity theories that explores student engagement as an outcome of risk assessment and reward choices. We build upon this work through our focus on understanding an effective learner from a cognitive perspective. We take the view of an individual's learning style being shaped by their behavioural patterns in perceiving and receiving information but we acknowledge a need to integrate other aspects of the learning environment and its stimulation and have proposed this where appropriate.. We have assumed a normative position that learners (in this case studying undergraduate business modules) will have a primary goal of being an effective learner that secures the highest grades possible through all means available.

- H1 - Student HE learners will seek to secure the highest grades possible through all means available

We proceed therefore, by seeking to outline concepts of learning and cognitive styles before moving on to discuss how an individual responds to an unfamiliar learning environment through those styles. This is something Boström and Lassen (2006) identified as an individual learner's meta-cognition. We then introduce the concept of Optimal Distinctiveness Theory (ODT) as a particular lens for examining this meta-cognition by viewing learner identity as a tension that arises when individuals function within new learning structures, where their sense of security and self may be challenged. Berger and Heath (2008) suggest an individual's sense of belonging to a new group identity extends beyond intergroup differences and we follow this by proposing ODT as an influence on the learner's information processing style. Sorrentino et al (2007) evidence in their work for example that the dynamic environment of the individual (context, purpose, needs and social demands) shapes the regulation of an individual's self, whilst Scanlon, Rowling and Weber (2007) similarly propose that it is the individual's experience, goals and interaction that shape their situation and sense of belonging to a particular HE learning context. We therefore anticipate there may be a range of factors active in shaping identity and situational cues with a new group in a learning context (Scanlon, Rowling and Weber, 2007; Berger and Heath, 2008).

2.0 Literature Review

2.1 Learning and Processing Styles (PS)

The behavioural perspective of learning suggests a relatively permanent change in behaviour of an individual can be shaped by their experience. It can arise from an internalised cognitive change rather than as a result of a biological development or maturation. Illeris (2012) identifies learning arising from the deployed learning method(s) and the individual's situational context. Learning is shaped by the interaction of the individual with their environment and is an internalised process of understanding. It is focused upon what is or can be reaffirmed via assimilation or accommodation of knowledge and the effort required to manage that process.

A learner identity has both a reflective focus (how that individual describes themselves (Lawson, 2014)) and a social focus (Terry, Micheal and White, 1999; Hogg et al, 2001). This aligns with the interpretive concept of identity from Scanlon, Rowling and Weber (2007) which emerges through social interaction between the individual and their situation. In HE, constructivist teaching is typically employed which encourages learners to challenge their ideas and prior thinking in a participatory manner in order to construct new knowledge and understanding (Driscoll, 2002). This can however be particularly problematic for the new first year student progressing from an environment designed for a standardised curriculum and assessment, smaller class sizes, extensive teacher engagement and with limited opportunities for critical expression and development particularly for the international student (Scanlon, Rowling and Weber, 2007). Alternative educational ideologies of progressivism, reconstructionism or enterprise are similarly transformative and challenging.

Constructivist learning exploits the assumption of a shared subjective learning process between and amongst learners and tutors. This however is of uncertain value for students new to the HE cultural and instructional styles. Assimilation and accommodation of new knowledge is based upon those learned experiences and occurs when new knowledge derived from interaction with the external world supports and extends the internal view of the world. The accommodation of knowledge occurs when new knowledge contradicts the internal view of the world but by adjusting that internal view to accommodate the new knowledge, an individual can understand the external world better and more effectively. This may, in the case of understanding disciplinary threshold concepts for example (Meyer & Land, 2003), give rise to quite radical changes to the internal view of the world. It is therefore of apparent importance, to reflect on whether a learner seeks to identify with a peer group (tutor and students) which would support the accommodation of knowledge and an internal cognitive adjustment. The act of considering how to process new information can be labelled as a Processing Style (PS) and it also been termed a 'Learning Strategy' (Bostrom and Lassen, 2006). Bostrom and Lassen (2006) further that this is not a fixed learner attribute but one that can be developed. Dean and Jolly (2012) reach a similar conclusion that the engagement choices made by student learners are amendable to change.

Bagat et al (2015) referencing the ideas of Curry et al (1981), outline a framework that presents this process of learning as an interdependent series of layers of cognition and practice. At the core of these layers is an argued individual cognitive style. This is believed to be biologically based and relatively stable although the

literature on this topic seems to have significant overlapping views on this (BECTA, 2005: Marlina, 2009). Tinajero (2012), for example, defines a cognitive style as a consistent pattern of functioning in both perceptual and intellectual activity which guides individual actions when confronting different situations and suggests ways of intervening in those situations. Humans are argued moreover to have two cognitive styles – a rational and experiential style (BECTA, 2005: Epstein, 2008: Kahneman, 2011). Epstein argues that these two ways of thinking have resultant independent processing styles and are significant contributors to observed learner behaviours. A rational cognitive style relies upon resources, time and applied reason and is less influenced by bias, whilst the experiential style is intuitive, fast and efficient but prone to systemic bias.

Epstein (2008) views that learners possess two approaches to processing information. Learners are 'Field independent' or 'Field dependent'. Field independent learners are confident with their internal view of the world and tend to assume an analytical approach towards information management. They are considered active information processors. 'Field dependent' learners on the other hand, are more sensitive to external cues and less critical of information presented to them. They struggle to hold awareness of the wider context of data presented to them with a resulting weakness for completing intellectual tasks beyond the scope of immediate practice. Similar dualistic processing systems have also been proposed by Soane et al (2014) for example, with analytical and heuristic processing systems and from Seabi & Payne's (2012). In the latter case, they focused on South African students transiting from high school to University¹ and extended the idea of a processing system duality to propose three types:

1. Normative – learners who engage with new information by internalizing resultant conflicts that it may generate. This manifests outwardly as a behaviour of respect for authority/teacher in an autocratic manner. There is a dislike of ambiguity and a resistance to new information, which poses a threat to personal values and beliefs. Information may be selectively misrepresented so that it does not impact or challenge pre-existing beliefs and values and the existing internal view of the world is thus defended.
2. Diffuse avoidant – learners who are hesitant to face up to and confront problems and difficulties, will procrastinate and are led by the situation at hand. They may act only when an immediate reward is expected or required. They typically have low levels of self-awareness and are poor at adapting their learning strategies to cope with change and uncertainty.
3. Informational – learners who actively seek out information and who are secure about their self-constructions and their willingness to test and revise these constructions when confronted with challenging feedback. They are independent and self-directed and less in need of emotional support. This processing style tends to result in behaviours and instructional preferences that are problem focused, requiring thoughtful decision making and actions. Of particular note, Seabi & Payne (2012) suggests this style is the most effective for achievement in traditional HE. This however is an interesting point. Den and Jolly (2012) for example contest this by suggesting that student learners who are the most disengaged (exhibiting perhaps a normative processing style),

¹ Using ideas from Berzonsky (1989: 1990)

are those for whom a change in their processing style may have the most impact and help establish effective learners who will also question, challenge and push accepted knowledge and understanding.

IPS	Engagement type description
Normative	Conflict – disruption within taught sessions and/or persistent absence, actively rejects materials taught and seeks to question and challenge scope and validity of assessment tasks
Diffuse Avoidant	Inertia – with frequent absence from taught sessions, little to no evidenced interest in the taught materials and late or just on time assessment submissions.
Informational	Positive – with motivational interest, cognitive depth to meet and exceed assessment expectations and robust attendance and participation

Table 1: Comparison between Processing Styles and student engagement interpretations
(Adapted from Saebi & Payne (2012))

These processing styles (Table 1) may have a number of different origins including for example, the structural requirements of a rigid curricula imposed through the schooling of the learner (Boström and Lassen,2006), but it seems clear that learners have preferences for receiving and storing information. Both Bagat et al (2015) and (Boström and Lassen,2006) focus upon instructional strategy choices (or learning modalities) which describe the alignment of instructional strategies to processing styles and cognitive style ((see also BECTA,2005: Coffield et al, 2004a: Marlina, 2009). This'matching hypothesis' can be questioned however as to its effectiveness in a typically diverse Business School class (Coffield et al, 2004b)). This view of the factors that shape effective learning has given rise to for example, integrated learning concepts such as the Pedagogical Content Knowledge (PCK) framework (Jang et al, 2009).

This PCK framework identifies that learners with limited intersubjectivity in a new (HE) learning environment, with limited awareness of alternative learning styles and being engaged by tutors with both a limited reflective and variety of instructional strategies to align with the content of learning materials, were those with most significant learning barriers to overcome. Those learning barriers may become exacerbated by the learner already possessing a normative or diffuse avoidant approach to processing new information or operationalising one, as a result of being in that challenging learning environment. Whilst Sorrentino et al (2007) propose that the smaller learning group may support a greater sense of situational identity and thus reduce learning barriers for the individual to find it easier to feel belonging to that group (it may also facilitate the matching of teaching style to learning styles for a smaller homogenous group of learners for example), both Badea et al (2010) and Scanlon, Rowling and Weber (2007) suggest the opposite may be true – perhaps because HE learning group sizes in classes invariably are always significantly larger than those new HE learners were previously accustomed to.

Whilst efforts can be undertaken to address learner support and tutor instructional style, what issues shape the identity tension between a learner processing style and their cognitive style and its evolution, is less explored (McKimmie et al, 2003: Boström and Lassen, 2006: Scanlon, Rowling and Weber, 2007: Jang, et al, 2009). Indeed, we agree with the views of Marlina (2009) that in our experience, student identity and engagement should not be a singular dimensional caricature of the culture of the learner (Kumaravadivelu,

2003: Scanlon, Rowling and Weber, 2007) and their inherent resultant dispositions. It is for these reasons that we explore the capacity of ODT as a moderating influence upon deployed processing style by the learner, cogniscent of the wider complexity arising in creating an effective learning environment with which the learner can identify. We therefore need to consider and reflect upon Self Identity Theory (SIT) and in particular Optimal Distinctiveness Theory (ODT) to help further this discussion.

2.2 Self-Identity Theory (SIT)

Hogg (2001: 186) presents a succinct overview of SIT by commenting that social identity is the knowledge that an individual belongs to certain social groups that have emotional and value significance. This can be increased by an individual identifying more with that group and evidencing conformity to those group values. Alternatively, Berger and Heath (2008) explore divergence within groups based upon disliked others and a need for individuals to have their characteristics recognised by others. Interestingly, they observe that both similarity and dissimilarity of the individual with the group, may both drive group divergence.

The relationships between these individual social identities can then result in preferred behaviours and outcomes, according to the value placed on those behaviours by the individual concerned (Terry, Michael and White 1999). As has been argued, the identity of an individual therefore is then a contributing factor to the observed behaviour of that individual. Chapman & Pyvis (2006) in a study of postgraduate student identity, focused upon conflicts with belonging, learning goals, learning styles and relationships to tutors which shaped their identification with their classes, whilst Marlina (2009) stressed the complex interplay between and within cultural groups in a classroom as influential on student group identification.

Inter group relationships may be shaped both by group compositions and their sizes (Hornsey, 1999) but also by cultural and regional differences especially if a learner is transiting to a new environment in which they have limited intersubjectivity (perhaps amplified for international students) (Scanlon, Rowling and Weber, 2007). This may also prominently feature national language for new first year international students (Le Ha, 2009) but **we also suggest this may** include domestic linguistic and shared intersubjectivity influences too as these may also shape social identity for the new first year student. Lawson (2014) for example explores the divergences from the perceived HE 'traditional learners' homogenous group and their relationship to emergent learner identity in the new HE situational context. Accents and colloquialisms could both highlight cultural dissimilarity or indeed homogeneity. Thus we have a focus upon language as integral to a student's processing style.

Both Scanlon, Rowling and Weber (2007) and O'Keefe (2013) comment on the importance of a sense of belonging for both first year students and postgraduate research students **whilst** O'Keefe (2013) **further** cites that Universities must themselves take care to not exacerbate any belonging disconnection and thus weaken student engagement. Belongingness for example is one of the most frequently cited factors shaping academic success for international students studying in a new learning environment (Hausman et al, 2007; O'Keefe, 2013) and has emerged as an area of interest for universities with new (especially international) students, alongside resilience based models of (inter)cultural adjustment (see for example Van Breda, 2001) and cultural capital models of HE transition (Scanlon, Rowling and Weber, 2007).

Glass & Westmount (2014) explored the relationship between academic success and cultural adjustment of international students, in their research work in the US. They focused upon the sense of belonging a student maintains with their learning environment, particularly in the areas of their student support network and the balance between student challenge and academic support. This work generated the Cultural Adjustment and Adaptation Scale (CAAS) (Portes et al, 2007) which has been mined in this paper, to help develop relevant constructs for the data collection tool. The CAAS assesses the degree of personal adjustment and discrimination, cultural sensitivity and social distance associated with operating in a culturally unfamiliar environment for counselling and educational purposes. We use this scale combined with factors emerging from Scanlon, Rowling and Weber's (2007) and Marlina's (2009) empirical work, to then generate an inclusively wide view of cultural and individual adjustment in processing styles that can encompass all new first year students, regardless of their domicile.

2.3 Optimal Distinctiveness Theory (ODT)

We have stressed thus far, the pressures upon students in new learning environments that shape their potential emotive and cognitive sense of belonging. We assert that this influences their processing style in their new HE learning environment. We can follow this further by a focus upon the concept of Optimal Distinctiveness Theory (ODT) (Brewer, 1991). ODT is a social psychological theory with roots in SIT and the early work of Fritz Heider, that addresses an individuals' propensity to identify with groups. It provides a reason for why humans seek in group and out group distinctions operating at the individual level (Berger and Heath: 2008: Leonardelli et al, 2010). ODT is of interest here as it may offer an explanation for why individuals may or may not identify with their class group and/or seek to adjust their processing style to do so (Randall et al, 2017), which would be a desirable outcome educationally. For example, one output of this could be whether the student decides to talk or not during a class (Marlina, 2009). This is an additional complement to the work of for example Boström and Lassen (2006) who identify that enhancing the learner's awareness of learning styles through reflection, helps enable the development of more suitable and aligned learning styles for different learning situations. We propose therefore:

- H2 –Expressed grade achievement potential (H1) will be positively associated with an information processing style
- H3 – Expressed grade achievement potential (H1) will be negatively associated with a normative processing style

Individuals may strongly identify with a group which simultaneously satisfies their needs for: 1) assimilation, a sense of belonging that draws people towards being a part of a group, and/or 2) differentiation or wanting to feel different from others (Brewer, 1991). Individuals manage the tension between these two goals by developing a capacity for social identification with distinctive groups that satisfies both needs simultaneously (Leonardelli et al, 2010). We are concerned in this discussion with the influence of potential identity tensions and their articulation through student comments and views, on their processing styles in new HE learning environments. Badea et al (2010) present this as the learner's management of social identity threats.

For example, ODT proposes that an individual will seek to restore an imbalance if they feel a need for more group belonging by searching for a way of satisfying the need that is lacking (Randall et al, 2017). When individuals feel highly assimilated into a group, they **could** then strive to distinguish themselves from group members by, for example, highlighting their unique individual characteristics (Berger and Heath, 2008). By contrast, individuals who feel too much differentiation from group members **could** seek greater assimilation into the group, **as they** search for ways of finding similarity with or value from, others. **This leads to our fourth hypothesis that in the supporting empirical work:**

H4 – There will be a positive relationship between a group identification and an informational processing style

According to ODT, optimal distinctiveness occurs at an equilibrium point when a person's needs for assimilation and differentiation are dynamically met. As Normative and Diffuse Avoidant processing styles seek to protect individuals and their sense of self, values and uniqueness, we may expect this to be supported for example by increasing student separation or association and thus personal value in distinct mono-cultural / shared value groups respectively. However, it could also be a potential source of resistance and a barrier to the development of a coherent (programme) identity for the student. For the first year student with a limited intersubjectivity in intergroup relations, the learner may exhibit tension in seeking to achieve an optimal point in a learning environment that offers both assimilation and distinctiveness, across perhaps a number of intergroup contexts and relationships. **We thus propose:**

H5 – There will be a positive relationship between self-identity and a normative processing style

H6 – A diffuse avoidant processing style will be positively associated with self-identity

ODT and processing styles are thus both presented as cognitive functions open to change, where a processing style is a derived influence of an individual's ODT. Berry (1998:2001) for example, in a focus upon the acculturation of immigrants, proposed four resultant coping strategies for individuals to 'fit in' to society, which explores the extent to which the culture of origin is being maintained and the extent to which the new host culture is adopted. This then gives rise to four different **observed** acculturation strategies:

1. separation (or where the student does wish to maintain their cultural identity in preference to the wider cultures in the learning environment and does not seek to engage with that context)
2. assimilation (or where the student would not wish to maintain their specific identity at the expense of non-engagement and thus seeks specific interaction with that context)
3. integration (or where the student does wish to maintain cultural identity but also seeks to engage with the new and wider society)
4. marginalisation (or where the student maintains little interest either in the new learning context or engagement with it and has little evident desire or preference to maintain their home culture).

Whilst acculturation coping strategies prioritised the cultural situational factor, they may also provide insight into the processing style actions chosen by new first year students.: **Similarly Dean and Jolly (2012) also report on the work of Folkman and Lazarus' (1985,1988) with regards to HE student learner emotional coping strategies for stressful educational situations whilst Van der Horst and Albertyn (2018) discuss the limits of**

understanding, where experience and knowledge shape culturally appropriate behaviour in the individual coaching of the learner. Their focus upon the integration of cultural intelligence with Kolb's experiential learning cycle lends further support to adopting Berry's (1998:2001) acculturation strategies. An aligned conceptual taxonomy is thus presented in table 2:

Processing Style	Engagement type	Belonging	Coping Strategy	Acculturation Strategy	A focus on my values?	A focus on your values?
Normative	Conflictual – disruption within taught sessions and/or persistent class absence, actively rejects materials taught and seeks to question and challenge scope and validity of assessment tasks.	Resistant to use of institutional learning support networks. Reliance upon inter and intra group family and connotational networks of support.	Confrontive coping – relatively aggressive behaviour seeking to change a situation to the learner's favour.	Separation	Low	Low
Diffuse Engaged	Inertial – with some absence from taught sessions, little to no evidenced interest in the taught materials but active engagement with materials through collaborative/ external means and adherence to expected behavioural norms of assessment.	Passive use of institutional learning support networks. Active engagement with inter and intra group family and connotation networks of support.	Planful problem solving – where the learner takes proactive steps to improve a problem.	Limited Integration	High	High
Diffuse Avoidant	Inertial – with frequent absence from taught sessions, little to no evidenced interest in the taught materials and late or just on time assessment submissions.	Resistant use of institutional learning support networks and neglect of / development of connotational networks	Distancing – emotionally and psychologically detaching from a problem learning environment	Marginalisation	High	Low
Informational	Positive – engagement with emotional interest, cognitive depth to meet and exceed assessment expectations and with robust attendance and participation	Active use of institutional learning support networks, connotational networks and feedback. Engagement beyond classroom context to wider extra-curricular activities	Positive Re-appraisal – where learners reassess themselves and take stock of helpful suggestions.	Assimilation	Low	High

Table 2- Proposed conceptual relationship between Processing Styles, Engagement, Belonging, Coping and Acculturation Strategies

A Diffuse Engaged processing style is presented as a variant of a 'Diffuse Avoidant' processing style based on the discussion above from Berry (1998:2001) and Dean and Jolly (2012) which may reflect students who may seek to value and maintain both a home identity and a group class identity concurrently. We generated this processing style by also reflecting upon the work of Marlina (2009) and Jang et al (2009) as it may describe student learners who wish to participate, engage and belong to their class groups but through deficiencies in instructional styles and/or tutor engagement, chose to not evidence interest in that learning environment and are less critical of their own values as a result. This could be by passive or limited classroom attendance and limited oral participation. To explore this empirically, we propose to test both the positive and negative bias relationships:

- H7a – A diffuse engaged processing style will be positively associated with group identity
- H7b – A diffuse engaged processing style will be positively associated with a self-identity

Figure 1 then presents the learner processing style types on the axes of focusing upon values in and of the class and values of the learner.

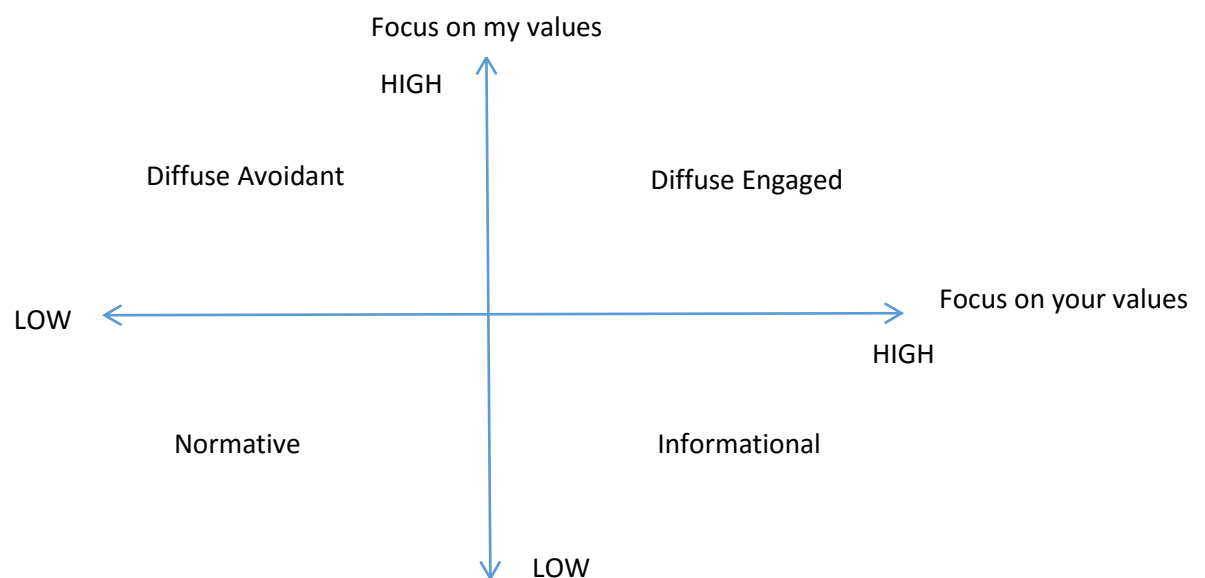


Figure 1: Representation of the learner types of Processing Style

2.4 Processing styles and ODT

Finally, Brewer (2012) proposes that people have different sensitivities to optimal distinctiveness. Older individuals are less reliant on proximal groups (e.g. a cohort group) as a source of optimal distinctiveness compared to younger individuals (Randall et al, 2017). Younger individuals will typically have a less established sense of self than older individuals (Hechanova et al, 2002) which may be perhaps more

expected for first year students, although the actual mix in a given class group may include both (Scanlon, Rowling and Weber, 2007). New HE learners can be anxious, confused, at risk of alienation and may lack confidence and assurance from significant others and their connotational networks that could continue to sustain their identity (Hechanova-Alampay et al, 2012).

Our discussion has **therefore** focused upon seeking to dig a little deeper into what factors might shape a new student learner's disposition towards their learning environment. In doing so we have sought to explore both cognitive and processing styles as being relatively stable orientations to the external world and its consumption but subject to change as the learner seeks to balance identity tensions within their new learning environment. **This review acknowledges its conceptual focus, but we hope it offers an additional complement to the existing body of work on the nature of the effective learner, especially for those studying in a diverse and dynamic area of HE found in Business modules.** We have outlined **the** initial duality of cognitive styles and extended the views of what may manifest as a processing style, by introducing a Diffuse Engaged processing style. This acknowledges an intention to engage and identify with a new learning environment but which is not then seen in observed outcome behaviour. We have proposed ODT as a vehicle to help understand the selection and development of a particular processing style in a complex learning environment.

3.0 Methodology

The emergent conceptual ideas suggest a number of potential influences may encourage and/or inhibit the formation of an optimal distinctiveness balance for a student learner and thus potentially a processing style. We chose to develop a self-administered online questionnaire using onlinesurveys.org (formerly Bristol Online Surveys) and collect data from a group of new first year students. Whilst interviews have merit in allowing access to the inner world of another person, we also wished to sample across the diversity of students in the first year in reasonable size. Hence, all new first year students across two UK HEIs in the North West of England studying business oriented modules were surveyed with their and institutional permission. Our focus was upon exploring the initial conceptual framework presented in this paper. This generated a sample of 83 viable consenting responses. In selecting two institutions, we hoped to reduce the potential impact of institutional variations in instructional practice regarding the management of the first year student experience per se.

Our data was ordinal in nature and reflected the latent constructs outlined in the discussion (Processing Style (PS) and Identity Orientation (IO)). Our processing style constructs focus upon the nature of engagement of the student learner with their environment (including language competence, group **composition**, **learner** domicile) whilst identity considered the discomfort that a student learner may experience in trying to 'fit' within a new learning environment from both a fellow student and tutor perspective and how that might be expressed.

The latent constructs are then presented and analysed through manifest variable constructs derived from the literature review and presented in **table 3**. Our sample set of data was **convenient** in nature (N=83 for all respondents and N=71 for UK domiciled respondents). Data was collected at the end of Semester 1 study period (January- February 2018). This timing was chosen to allow for students to both develop an

awareness of their new learning environment beyond an 'honeymoon stage' and to exclude (by self-selection) those who would have withdrawn from studies and whose views may have thus skewed the data collected if commencing earlier in the academic year.

The reliability of the constructs is given by their Cronbach Alpha value. Benk, Cakmak and Budak (2011) citing Carmines and Zellere (1979) suggest that an alpha value >0.6 is acceptable for measuring the reliability of a set of items to which a single dimension (ie uni-dimensional such as those in table 3) is constructed, although Nunally (1978) suggests this acceptability value varies depending upon the discipline and nature of work being undertaken. So upon review, the Diffuse Avoidant Processing Style (as outlined in H6) construct alpha value <0.6 (which is generally unacceptable) could be explained by a number of reasons. These include a low sample size, a small number of items (questions) in the construct, the large number of response options per question or that the items used in the construct are not uni-dimensional (ie not appropriately aligned to give insight on the given construct). In the case of the latter, deleting the construct variables impacts upon the alpha value negatively excepting for Q10A5 when the alpha value rises to 0.504 with the remaining two variables and although this still remains low, Perry et al (2004) suggest alpha values of >0.5 have moderate reliability.

To test the uni-dimensionality for the construct concerned (H6), a factor analysis was undertaken. This identified only the one extracted component (with an eigenvalue >1) for the Diffuse Avoidant Processing Style construct thus supporting its uni-dimensionality (in this case the Keyser-Meyer-Olkin measure of sampling adequacy for the sample size was acceptable at 0.527) . We have confidence therefore that the construct is valid and to improve it we could either add more aligned variables that would support the construct by a broader literature reflection of this processing style or seek to increase the number of cases.

Construct	Questions	Cronbach Alpha
Informational Processing Style	10A3, 10A7, 10A9, 10A14, 10A15	0.631
Normative Processing Style	10A4, 10A10, 10A11, 10A13, 10A18, 10A19	0.831
Group Identification (UK students)	7A1, 7A2 (Reversed), 7A3, 7A4(Reversed)	0.808
Self Identification (UK students)	8A1, 8A2,8A3, 8A4, 8A5, 8A6, 9A1, 9A2, 9A3, 9A4, 9A5	0.919
Grade Achievement and methods	10A1, 10A2	0.790
Group Identification (non UK students)	7B2,7B4,7B5,7B6,7B8,7C2,7C4,7C5,7C6,7C8	0.705
Self Identification (non UK students)	7B1,7B3,7B7,7B9,7C1,7C3,7C7,7C9,8A1, 8A2,8A3, 8A4, 8A5, 8A6, 9A1, 9A2, 9A3, 9A4, 9A5	0.837
Diffuse Engaged Processing Style	10A6, 10A7, 10A9, 10A14, 10A15, 10A16	0.651
Diffuse Avoidant Processing Style	10A5, 10A8 10A12	0.451*

Table 3 – Manifest constructs for the hypotheses and their associated questions and reliabilities

(This rises to 0.504 when 10A5 is eliminated)

All relevant value questions deployed a Likert scaled response using a common 1-10 range response score², mitigating potential bias of 1-5 or 1-7 Likert scale, on the advice of Brody and Dietz (1997), Shulruf *et al.* (2008) and Carifio and Perla (2008) and we were confident students could answer all questions directly. A number of questions operationalised reversed Likert scales to ensure internal consistency and any contradictory paired responses were excluded from the analysis. Similarly, a number of recoding steps were required (to assure the internal consistency of the data) and undertaken.

Composite means were created to construct the manifest variables and regression analysis conducted of those constructs.

4.0 Findings and Analysis

Table 4 presents a summary of the participants by gender and their programme of study.

Variable		N	%
Male		64	84
Female		19	16
UK Domiciled		69	84
Non UK Domiciled		14	16
Programme	Frequency	Percent	Cumulative Percent
Business Management	12	14.12	14.1
Accounting & Finance	10	11.76	25.9
Business and Events Management	9	10.59	36.5
International Tourism Management	7	8.24	44.7
International Business Management	7	8.24	52.9
Events Management	6	7.06	60.0
Marketing	6	7.06	67.1
Global Entrepreneurship and Business Management	4	4.71	71.8
Event and Festivals Management	3	3.53	75.3
Events Management and Marketing	3	3.53	78.8
Geography	3	3.53	82.4
Biological Science	2	2.35	84.7
Business Management and International Tourism Management	2	2.35	87.1
Geography and International relations	2	2.35	89.4
Marketing and Advertising Management	1	1.18	90.6
Biology and Psychology	1	1.18	91.8
Business Economics	1	1.18	92.9
Business Finance	1	1.18	94.1
Economics And Business	1	1.18	95.3
Event Management and International Tourism Management	1	1.18	96.5
Business Management and Marketing	1	1.18	97.6
Marketing and Tourism Management	1	1.18	98.8
Sport and physical education and geography	1	1.18	100.0
SUM	85	100.00	

Table 3 – Demographic profile of the sample of new first year students.
(two cases are excluded from the final analysis, generating N=83)

The **first hypothesis** (H1) argues that the student HE Learners will explicitly seek to secure the highest grades possible through all means available. This is a normative assumption of the work. For all cases (N=83), the mean of Q10A1 (pursuit of achievement of high grades) and Q10A2 (pursuit of grade

² Where 1 denoted full agreement and 10 denoted full disagreement.

achievement by all means available) was calculated at a 1.59 when both values were combined (on the previously stated 1-10 Likert scale). **Table 5** details these means for the sample.

	Q10A1	Q10A2	Combined
All cases	1.49	1.68	1.59
All UK cases	1.52	1.74	1.63
All cases: Female	1.47	1.58	1.53
All cases: Male	1.55	2.05	1.80

Table 5: Comparisons of the new student learner desires for achievement by all means available

From **table 5**, unsurprisingly all students in all cases outlined their desire for the best outcome possible for their studies through all means available (H1). However, this does not seem to be generally supported by an appropriately aligned processing style with a group identity orientation as evidenced in subsequent hypotheses. **Table 6** presents a summary of the linear regressions of the presented hypotheses .

	All Cases		All UK cases		All non UK cases	
	R ²	p	R ²	p	R ²	p
H2	0.044	0.057	0.032	0.139	0.043	0.496
H3	0.214	0.052	0.057	0.642	0.397	0.179
H4	0.003	0.618	0.009	0.443	0.149	0.192
H5	0.714	0.000	0.505	0.000	0.811	0.001
H6	0.589	0.000	0.239	0.047	0.850	0.000
H6*	0.397	0.000	0.297	0.000	0.873	0.006
H7a	0.552	0.000	0.176	0.145	0.918	0.000
H7b	0.146	0.187	0.014	0.911	0.383	0.196
	N=83		N=69		N=14	

Table 6: Linear regression results of the hypotheses

(H6 tests the Diffuse Avoidant Processing Style construct with Q10A5 deleted)*

For example, (H5) was clearly supported by the small empirical evaluation presented here across all cases (UK and non-UK cases). In other words, new student HE learners were active in commenting and taking actions that secured their self-identity and individuality by operationalising a normative processing style in their new learning environments. This is apparently conflicting with their desire to secure the highest outcomes possible through all means available. This is further supported by the outcome of (H3) which did not offer evidence of a negative relationship between (H1) and the normative processing style. That is to say, it was expected that new student HE learners would associate securing grade achievements by all means necessary with being open to knowledge, its development and engaging in their learning environments.

Partial evidence only was offered for H2, that an informational processing style was associated with the normative assumption of student learners pursuing grade achievement by all means available (when all cases are considered).

5.0 Discussion and Conclusions

The literature review proposed a relationship between the security and balance of a student learners' identity and their cognitive processing style through the concept of seeking optimal distinctiveness with their new learning environment. It was argued that such new learners would, in pursuit of securing grade achievement by all means necessary, seek to identify with their new learning environment in an open and engaged way. Conceptually four processing styles were outlined, expanding on the three established in the reviewed literature and then explored for new first year students in two UK HEIs. Whilst the sample size was relatively small and results must therefore be viewed with some caution, a number of interesting observations are made from the work when combined with the empirical evaluation.

Firstly, whilst there was strong support for the normative goal of seeking to achieve the highest outcomes possible and exploit all learning opportunities (see **Table 5**), this did not in general support an expected appropriate processing style being operationalised by seeking to engage and identify with their new learning environment. **Thus we might state that, at least in our sample, there are no 'bad' student learners.**

Clear evidence was found that new student learners (in all cases) operationalised a normative processing style which was correlated to actions and views that reflected a focus on supporting and maintaining self-identity (H5). In other words, new student HE learners maintained this processing style by not engaging or identifying with their new learning environment or group cohort. The strength of this relationship for (H5) was also stronger for non-UK students. This latter outcome is perhaps not a surprise given that non-UK students may feel particularly uneasy in a new learning environment where they may have acute language and cultural barriers to surmount to identify in that environment.

In all the cases examined, the support for a normative processing style was not however identified as being associated with the pursuit of grade achievement by all means available. In other words, in the sample surveyed, whilst the new HE student learners (all cases) expressed a strong desire for a higher performance output, this did not mean they implemented a preferred informational processing style as a result of seeking to identify with their new learning environment. We discuss this view a little further below. One explanation of this however might be that new student learners do not seek or experience the desire for group identification in order to pursue achievement in their grade outcomes. Whilst we have argued for this as the normative assumption of this work, a supporting exploration of attendance data, other time demands on student learner availability, or student views about the function of taught class sessions in securing their group and programme identity, may help explain this observation. For example, Pownall (2012) suggested that whilst the mode of teaching contributes to attendance in UK HEI business modules, a weaker attendance pattern by some students did not necessarily equate to being unprofessional in the views of those students.

Partial evidence is offered that the new student learners surveyed did associate pursuit of a high grade achievement outcome by all means available with an open and engaging approach to their new learning environment and recognition of the need to question and evaluate personal assumptions and values. This partial evidence however is far weaker than that evidenced for (H2). Exploring the other processing styles (Diffuse Engaged and Diffuse Avoidant (H7a,H7b and H6 respectively)), generates further observations.

A diffuse engaged processing style student learner is one who seeks to value and maintain both a self-identity and a class identity concurrently. It describes student learners who wish to participate, engage and belong to their class groups but perhaps through deficiencies in instructional styles and/or tutor engagement, chose to not evidence interest in that learning environment and are less critical of their own values as a result. This could be by passive or limited classroom attendance and limited oral participation. Whilst evidence of this processing style is found in all cases and all non-UK cases, the strength of the association between this style as a result of seeking group identification is very strong for the non-UK sampled students. Whilst this however is a small (non-UK) sample, and likely skewing the 'all cases' evidence, it does suggest that the non-UK students do recognise through their reported actions and values that a more open approach to that environment is valuable and thus support a collective group identity with their new learning environment. Conversely, no evidence in any of the case situations explored, supported a diffuse engaged processing style being the outcome of motivations to secure and preserve self-identity and values.

Finally, (H6) proposed that a diffuse avoidant processing style would be positively associated with self-identity which was strongly evidenced in all situations and cases explored, particularly for the smaller sample of non-UK students. Such learners would then be hesitant to confront problems, will procrastinate and deadlines will tend to drive their work and outcomes. **Whilst the reliability of the Diffuse Avoidant Processing Style construct is low as discussed earlier, deleting Q10A5 from its construct improves that reliability whilst not changing the evidenced associations with self identity.**

The evidence presented **in this study** offers a qualified yes to the question, that ODT **seems to be** a potential factor shaping the active selection of a processing style of new HE student learners. Students new to the HE learning environment all aspired to achieve, however the literature preferred processing style (informational) was not evidenced with this aspiration. Instead normative processing styles were described and correlated with actions and values that describe the preservation of self-identity by the new learners. It may be that such new learners, in unfamiliar and unknown learning environments will strive to distinguish themselves from other group members, or have their individual characteristics highlighted by others in the group. However, whilst this may have emerged as a clear outcome of the analysis, an exploration of other processing styles suggests that as all students do seek high achievement output by all means necessary, a diffuse engaged processing style is also evidenced by their specific comments.

As ODT is focused upon the dynamic balance an individual seeks to maintain between their sense of self and the need to belong, the apparent contradiction between pursuit of grade achievement by all means necessary, with an evidenced normative processing style but also support for concurrent diffuse engaged processing styles, is arguably reflective of the dynamic focus of ODT. Thus ODT it seems has value in

shaping resultant processing style actions and views. We concur therefore with Badea et al (2010) that these learners were actively seeking to manage identity threats and in doing so seeking to resolve the resultant cognitive dissonance that emerges.

Cognitive dissonance arises as humans are sensitive to differences between held beliefs and their resultant actions. It suggests that resultant actions can influence subsequent beliefs, attitudes and values. With evidenced cognitive dissonance, this tension is resolved through, for example, changing beliefs and values – in our case by the student HE learner changing to a more informational or diffuse engaged processing style. This however is difficult if those values and beliefs are long held **and shape identity**. A second resolution can arise by seeking to not experience this discomfort by avoiding the situation arising again. Thus the situation is averted by **for example** increasing non-attendance and non-engagement **or** perhaps engaging in other modes of learning with peers **or through other forms of tutor contact**. A third resolution **can finally** arise from changing how the actions of the student HE learners are justified (the use of a normative processing style) and thought of reflectively differently. For example, the tension arising from ODT to engage more in the new HE learner group but that this is not occurring in practice, can be rationalised and reduced by a view that no-one engages anyway, so why should they? It seems to us that there is potential for cognitive feedback mechanisms to be created which sustain and propagate processing styles disadvantageous to student achievement and which warrants further investigation both conceptually and practically in terms of new student induction and orientation to new HE learning environments.

As a programme of practical action therefore we suggest the following may have merit in addressing the dynamic balance of ODT for a new HE learner that enhances group ties to help shape their values and beliefs that can result in preferred change to their processing style.

- **Tutors need to ensure that the limited class engagement and poor attendance are not taken as evidence of an ineffective learner. Following Dean and Jolly (2012), this may then mean having difficult conversations with those learners to offer them emotional support.**
- **Tutors can also seek to offer flexibility within the new learning environment that supports greater ownership of it by the new HE learner (and thus a greater reflection of existing learner values and beliefs) – through for example flexible assessment strategies, mutual agreement of the scope of study within the learning environment or non-punitive attendance requirements that would not exacerbate dissonance difficulties.**
- **Organising an ‘in group’ reflective of the diversity of the class and working within the new HE learning environment could also provide a stimulus to shape learner optimal distinctiveness when this conveys a shorter cognitive journey for the learner to travel to identify with their group. Whilst it is common for example for Universities to engage students as peer mentors, this is both typically voluntary and outside of the actual class learning environment. Following the lead from McKimmie et al (2003), by operationalising such mentors as ‘in groups’ that are dispersed across the class, the dissonance discomfort may be lessened for new HE learners.**
- **Encouraging new HE learners to care about other learners in their class may also have the benefit of exploiting vicarious dissonance. Learners may therefore experience this dissonance when they**

observe members of their group behave in ways that are inconsistent to their prevailing attitude (Cooper, 2010). Whilst the vicarious dissonance effect is only observed when the individual identifies with his or her group (so a focus upon informational processing style learners is important) it could generate a peer bridge to reach a diverse group of HE learners and encourage recognition of the values and identity of those learners thus encouraging adjustment in their distinctiveness. . Raising student learner awareness of their social identity, through say an induction process. Cruwys et al (2016) for example propose a social identity mapping (SIM) concept that transforms social identity into an interactive, reflective and reflexive process. In other words, SIM can bring to the student learner a cognitive awareness of their values, self and existing supporting networks which has therapeutic value in reducing tensions and resistance to change, or in our situation encouraging student learners to identity with group values. SIM offers a relatively simple mechanism to identify to the student learner their membership of groups and their importance, rating, similarity to and compatibility between groups they report on. Cruwys et al (2016) suggest that SIM is helpful when participants wish to have a visual, interactive and therapeutic experience that can potentially modify a participants social-psychological reality.

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